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Three new species of Tabanidae from Southern Africa (Diptera)

by

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SYNOPSIS

The following new species are described and figured: *Philoliche* (*Ommatiosteres*) *marriotti* n. sp. and *Philoliche* (*Phara*) *oreophila* n. sp., both from the Natal Drakensberg Mountains, and *Limata kuhnelti* n. sp. from the Namib Desert of South West Africa.

INTRODUCTION

The three species forming the subject of this paper are in no way related, but are a miscellaneous trio from a number of undescribed species in the Natal Museum collection. *Philoliche* (*Ommatiosteres*) *marriotti* n.sp. caught my attention on account of its superficial similarity to *Philoliche* (*Phara*) *andrenoides* Usher (1965); that *marriotti* had wrongly been identified as *brunnipennis* Loew (= *subfascia* Walker) explains how it came to be overlooked for so long. Also in the genus *Philoliche* Wied., but in the subgenus *Phara* Walker, is the superficially similar *oreophila* n.sp., based on a single specimen which, like others caught by Mr. Kenneth Tinley, is in such good condition as to make its study a pleasure.

While my husband was in Vienna, Professor Wilhelm Kühnelt was kind enough to give him a tabanid he had caught while staying at the Namib Desert Research Station at Gobabeb, South West Africa. It represents a most interesting new species, peculiar in many respects and the first member of this family to be recorded from the Namib. I am grateful to Professor Kühnelt for allowing me the honour of studying the fly and for donating it to the Natal Museum.

My work on Tabanidae has been greatly assisted by the advice and opinions of Mr. Harold Oldroyd of the British Museum (N.H.) My grateful thanks go to my husband for his advice and field assistance. This study was made during the tenure of a bursary awarded by the South African Council for Scientific and Industrial Research, to whom my gratitude is due.

DESCRIPTIONS OF NEW SPECIES

Genus *Philoliche* Wiedemann

Philoliche Wiedemann, 1828, Auss. Zweifl. Ins. **1**, p. 95; Bequaert, 1930, Harvard Afr. Exped. Liberia **36**, p. 880; Oldroyd, 1957, Horseflies Ethiop. Reg. **3**, p. 319.

Philoliche (Ommatiosteres) marriotti n.sp. Figs. 1-3

As the face of this specimen is partially bare and shining with mostly thin tomentum elsewhere, this species would seem to be intermediate between the subgenera *Phara* Walker and *Ommatiosteres* Enderlein (Oldroyd 1957, p. 322). However, as it has the peculiarity of the wing venation of the *angulata* species group, namely the first posterior cell closed and stalked, and R_5 with a stump vein (Oldroyd, *op. cit.*, p. 365), I have included it in *Ommatiosteres.* An interesting feature is the close proximity of the R_5 stump vein to M_1, and it appears that this appendix is being lost. The brown, shining, bare state of the buccae is also a characteristic in common with the *angulata* complex of species.

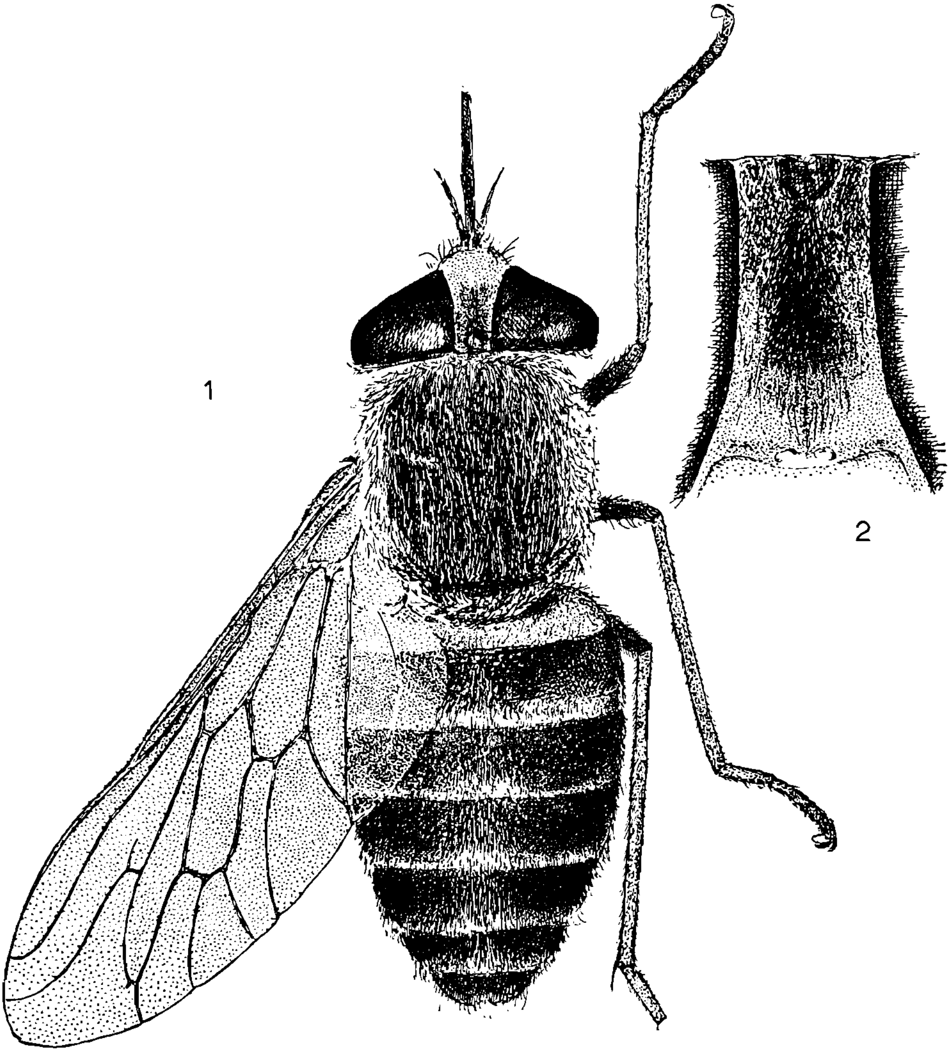
In shape and colouring this species closely resembles *P.* (*O.*) *caffra* (Macquart). The abdomen is less rounded and more elongate, and *caffra* has more orange colouring basally, on the first two tergites; the first tergite of *marriotti* is almost entirely yellow-brown and the second has more extensive lateral patches. In *caffra* the frons is slightly narrower with a less distinct and less dark median area, and with pale golden hairs upon this, not dark, bristling ones. Also, the face is less bare and shining and without white subantennal spots of tomentum, and the second palpal segment is slightly more swollen and the antennae more orange or reddish-orange on the third and (usually) the terminal segments. The faint thoracic markings are yellowish-grey, and not whitish as in *marriotti.* These differences are not very great, but the species look distinct macroscopically, although the distinctions are not easy to describe, and I think this is a valid species and not a Natal form of *caffra.*

In general shape and in the wing venation this species is very like those in the *angulata* group, and is intermediate between *caffra* and *angulata sexfasciata* in colouring. The face of *marriotti* is less thickly tomented and more hairy than that of the species in the *angulata* group, and the abdominal pattern is much less conspicuous; even the banded *sexfasciata* has small but clearcut median white abdominal triangles. The *angulata* group, considered by Oldroyd (*op. cit.*, p. 365) to be a natural one, includes species from the Cape Province, Orange Free State, Lesotho (Basutoland), Angola and from several localities north of the equator, but none is known from the intermediate regions of Natal, Rhodesia, Zambia, Malawi and Portuguese East Africa. Apparently *marriotti* is the first Natal member of the group to be recorded.

Another species with a similarly coloured and banded abdomen is *atricornis* (Wied.) which is not a member of the *angulata* group, having R_5 smooth, without an appendix or an angle. Most specimens of this species are small, rotund and bee-like, and could not be mistaken for *marriotti.* However in the Transvaal Museum collection there is a series of *atricornis* from Stellenbosch, Western Cape Province, caught in September-October 1925, by H. Brauns, which shows a considerable amount of variation. The largest specimen is still smaller than *marriotti*, but the frons is nearly as narrow and the abdomen is much less globular than usual. Only one specimen, also from Stellenbosch but caught in 1887, has orange-brown on the abdomen, and this is in blurred patches and not in quadrangles. The main differences from *marriotti* are the complete lack of an appendix or angle to R_5, the thicker white tomentum on the face, the white hairs on the frons, face and buccae, and especially the arrangement of some of these hairs in a fan-shaped spray on the lower frons on either side of the antennal bases and across the face just above the proboscis.

Despite the similarity in colouring and the presence of yellow hairs forming median triangles in *atricornis*, *marriotti* still differs in the less striking markings, and the colouring of the head is distinctly more greyish-brown macroscopically.

Macroscopically, *marriotti* is a medium-large, rather brownish and black species. It has a black abdomen and narrow, whitish-grey hind margins with yellow hair on all tergites, only the second tergite with lateral orange-brown patches. The median golden triangles of hairs have no underlying tomentum and in consequence are not conspicuous. The thorax is shining through brownish-yellow hairs, with very little visible tomentum, but the holotype is damaged and possibly the sublateral stripes would be more conspicuous in



Figs. 1 and 2. *Philoliche* (*Ommatiosteres*) *marriotti* n.sp. (1) holotype, (2) frons.

a better specimen. There is no well-defined callus, but the central area of the frons is darker and the buccae, lower parafacials and lower face are dark, shining brown. The hairs on the lower head are dull whitish-yellow, those of the upper two-thirds of the frons are dark. The femora are blackish-brown and the tibiae light orange-brown. The holotype lacks some legs.

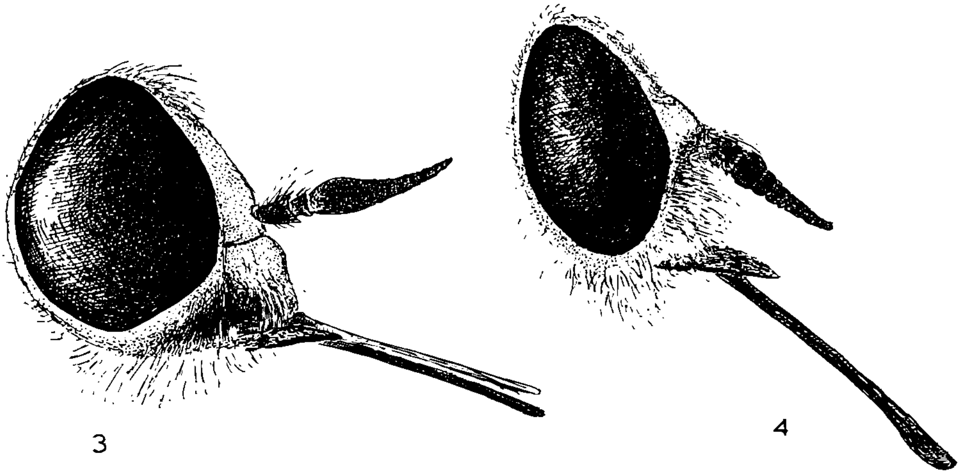
Head: Eyes bare. Frons fairly narrow, nearly parallel-sided but slightly divergent, red-brown at vertex with brown recumbent hairs, tomentum becoming yellowish-grey along eye margins part way down frons, with mostly pale, recumbent yellowish hairs and a few dark ones; tomentum continuing pale across lower frons beneath callus area, somewhat reddish medially with pale yellow-gold hairs mostly on this darker region. Bare, smooth, shining, dark brown ocellar area at vertex, without ocelli. Broadly triangular, indefinite, dark brown area with semi-erect, black hairs and not a well-defined callus, occupies central region of frons, reaching ocellar area. Subcallus not separated from frons, with thin, similarly coloured yellowish-grey tomentum, a little reddish centrally, black-brown ground colour not completely obscured; hairs centrally only, pale yellow-gold. Face orange-brown in upper lateral corners and narrowly below antennae and along lateral borders, with yellow-grey tomentum and long, sparse, dull, yellowish hairs laterally; centrally tomentum is very thin over black ground colour; lower face shining black; there are two subantennal spots, medium-sized, of white tomentum, poorly defined and visible only in frontal lighting. Parafacials very narrow, reduced to narrow strips along eye-margin, black in ground colour with yellow-grey tomentum which continues around eye margin. Lower parafacials and buccae black and black-brown, shining, without tomentum; hairs, on lower buccae only, dull, long, thick, yellowish. Antennae: first segment blackish-brown, much longer than second, wider at apex than at base, hairs long, sparse, yellowish-white and black, and short black; second segment very small, slightly paler with short, black hairs; third segment almost square, narrowly orange basally, otherwise blackish-brown as are the tapering terminal segments. Palpi: first segment subcylindrical, shining, dark reddish-brown with long, sparse, yellowish hairs below; second segment not swollen, but tapered and bluntly pointed, with short, black hairs. Proboscis broken in holotype, dull black, remaining stylets of moderate length (fig. 3).

Thorax: Mesonotum and scutellum subshining black with rather sparse, long, pale, yellowish hairs, thickest on lateral borders, appearing somewhat brownish macroscopically. Traces of sublateral stripes in white tomentum run back to transverse suture which is greyish-white; lateral borders also with some whitish tomentum beneath thick hairs. Mesonotum cracked in holotype, fresh specimens possibly with more clearly defined white markings. Pleura black-brown in ground colour with thick, whitish-yellow woolly hairs and some dark ones centrally on mesopleuron.

Legs: Coxae like pleura, shining black with long, pale yellowish hairs. Femora dark black-brown, narrowly pale apically with mostly short, pale and some dark hairs apically, hind femora with mostly dark, longer and more numerous hairs. Tibiae yellow-brown with very short, black hairs. Tarsi yellow-brown, all segments tinged darker at apices except basitarsus, this darkening progressively deeper on apical segments. Hind tarsi missing except for orange-brown basal segment on each leg.

Wing: Transparent, without markings, anterior cells yellowed, remainder faintly smoky, veins light brownish-yellow. Numerous short, black hairs on costal vein, forming dark crest along outer basal portion which is expanded and slightly grooved. Basicostal scale velvety-brown. R_4 with long appendix; first posterior cell closed and stalked, stump vein of R_5 close to stalk.

Abdomen: First segment black basally around scutellum, a little orange-brown laterally with wide hind margin of whitish tomentum, expanded laterally. Second tergite broadly orange-brown laterally with black central region approximately semicircular, broadest on apical margin, reaching narrow, white hind margin which is made up of whitish tomentum and short, yellowish hairs and is slightly expanded laterally; median triangle made of golden hairs only, without tomentum, of medium size; hairs short and black on black areas and orange patches. Tergites 3-6 black, subshining with whitish hind margins, hairs short, yellowish-white on pale areas, long and conspicuous white ones laterally, and short, black ones on dark areas; centrally golden hairs make up inconspicuous median triangles; sixth tergite with mostly golden-yellow hairs on hind margin. Seventh tergite without median triangle but with lateral and hind border of long, yellow and whitish-yellow hairs with a few, long dark ones. Venter: first and second sternites orange-brown, second with broad, tomented, white hind margin having short, yellowish-white hairs, on dark areas hairs long, yellowish-white. Third sternite orange-brown basally, shading to black; hairs long, yellow, and short, stiff, black; tomentum of narrow hind margin whitish, hairs short, pale yellowish. Remaining sternites black with narrowly pale hind margins, hairs long, mixed golden and black, predominantly golden on hind margins.



Figs. 3 and 4. (3) *Philoliche (Ommatiosteres) marriotti* n.sp. (4) *Philoliche (Phara) oreophila* n.s.p. Head in lateral view.

Measurements: Length without antennae, 16 mm; wing 14 mm.

Holotype ♀ in Natal Museum (Type No. 1138), labelled "Drakensberg N.P. S.E. Cathedral area, July 1946, W. E. Marriott". In all our visits to the Natal Drakensberg my husband

and I have never seen this species, but we seldom go there in winter, usually an unproductive time for Diptera.

The specimen has been labelled "*P. brunnipennis* det. Stampa, '53". Although there is some superficial resemblance to *subfascia* (Walker) (= *brunnipennis* Loew), *subfascia* is a member of the subgenus *Buplex* Austen, and the characteristically open first posterior cell of all the *Buplex* species easily separates it from *marriotti.*

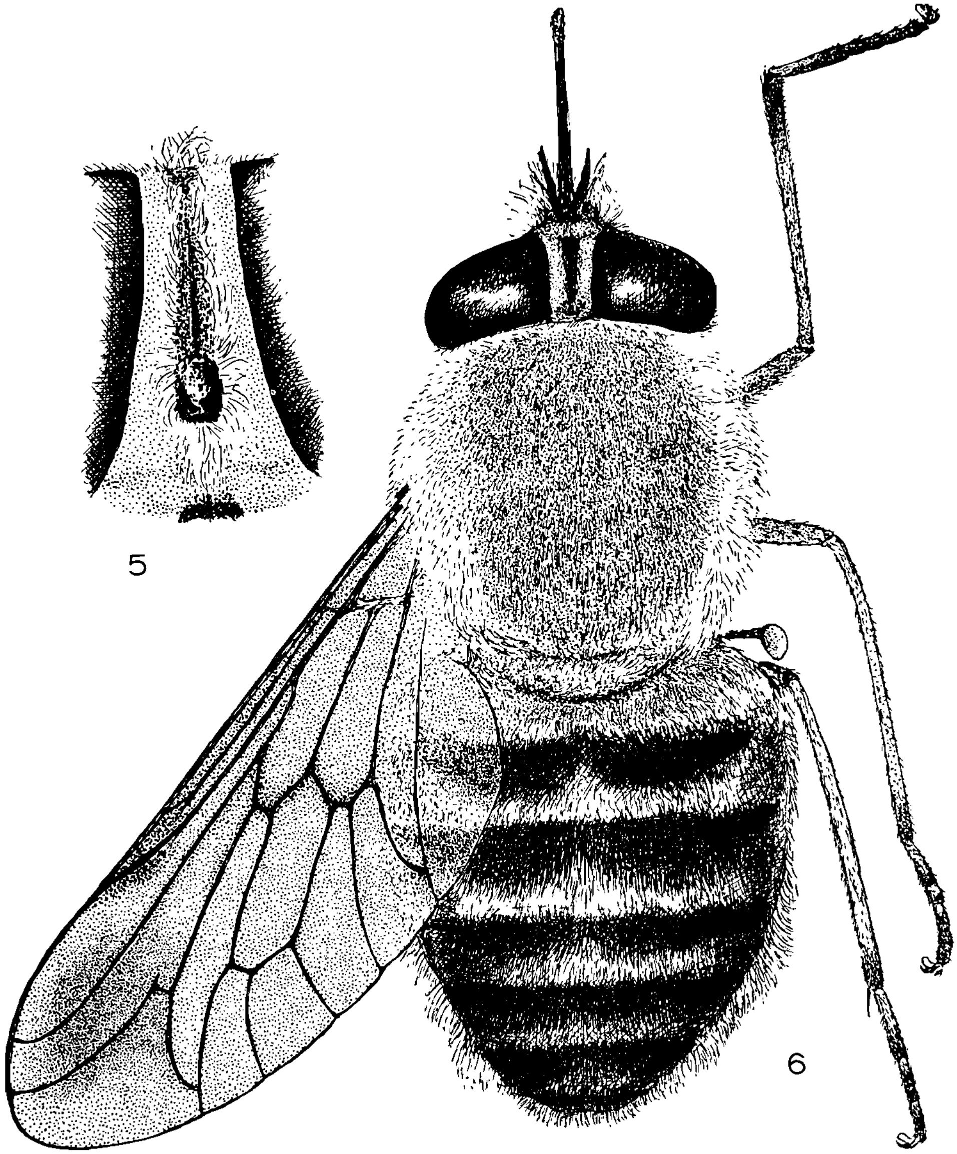
Philoliche (Phara) oreophila n.sp. Figs. 4-6

This species falls in the subgenus *Phara* Walker (Oldroyd 1957, p. 411) as it has the bases of the antennae close together and the face somewhat swollen and shining.

In Oldroyd's (*op. cit.*, p. 412) key to the species of *Phara* this species comes out, rather unsatisfactorily, as *quinquemaculata* (Austen) to which it in fact bears very little resemblance. The abdominal patterns immediately separate the species; instead of a banded abdomen *quinquemaculata* has two pairs of lateral white tufts and three median, golden triangles. Both *oreophila* and *andrenoides* Usher (1965) have banded abdomens and pale tibiae with darkened tips; the frons of the former, though narrower, is very similar, and the callus is almost identical. However, *andrenoides* has a more sharply defined and brilliantly coloured abdominal stripes, and its wing has no cloud at the tip. The wing markings of *oreophila* are curiously like those of *P.* (*Maverica*) *spiloptera* (Wied.) and in general appearance *oreophila* is not unlike a hairy *spiloptera*, but the subgeneric characters of the frons and face separate these species conclusively. Oldroyd (*op. cit.*, p. 410) mentions that *Maverica ingrata* Oldroyd is intermediate between the subgenera *Phara* and *Maverica*, so it is not impossible that *oreophila* is related to *spiloptera* and is not merely showing convergence.

This is a medium-sized, yellowish-grey and black, rather nondescript and dusty-looking *Phara.* The abdomen is dull black with pale yellowish hind margins of hairs and not tomentum; a conspicuous feature is the scalloped, brassy, lateral abdominal fringe. The thorax is very hairy, and greyish-yellow. The wings are unusual, with an isolated grey cloud at the apex; the veins are very dark except basally, and the membrane is greyish-brown.

Female: (fig. 6).
Head: Eyes bare. Frons (fig. 5) fairly narrow, divergent towards the antennae, eye margins without definite angles at lower end of frons. Callus elongate, black, subshining, divided into a roughly pentagonal, smooth, slightly convex lower area, and elongate, matt upper area which reaches ocellar tubercle and is cleft medially for its entire length. A small protuberance, presumably the median ocellus, is situated anterior to the upper angles of the eyes. Ocellar area lacking tomentum, nearly circular, somewhat flattened; traces of other ocelli, if present, are obscured by long, thick, erect, pale hairs. Tomentum of frons thick, pale greyish-yellow. Hairs long, pale, whitish-yellow, distributed along callus margins; proclinate hairs medially on subcallus and around lower end of callus, eclinate for a short distance, and reclinate along matt upper area of callus (fig. 5). Subcallus swollen centrally so that bases of antennae are situated on a protuberance jutting over the face. Black ground colour of subcallus shows through whitish-yellow tomentum which is thinner



Figs. 5 and 6. *Philoliche* (*Phara*) *oreophila* n.sp. (5) frons, (6) holotype.

and paler than on frons; there are two small, dark brown semicircles of tomentum above bases of antennae. Face shining black, bulbous, but becoming concave just before lower margin, partially obscured by long, pale yellowish inclinate hairs. Parafacials and buccae with black ground colour showing through thin greyish-yellow tomentum. Hairs on parafacials short, pale, becoming long and yellowish-white on lower buccae. Palpi: first segment rather elongate, subcylindrical, subshining black, with sparse pale hairs below; second segment about as long as first, swollen basally but not greatly enlarged, tapering rapidly to blunt point, greyish-black, subshining, with mostly recumbent, long, pale yellowish-white hairs and a few bronze ones apically. Antennae: first segment larger than second, both subshining black with pale, yellowish-white hairs, hairs on first segment long, with dorsal hairs curving forward over second segment and part of third; third segment only slightly wider than first, almost square, and together with tapering terminal segments, velvety-black. Proboscis (fig. 4) of medium length, black-brown.

Thorax: Matt-black with a little thin tomentum visible behind head, only very indistinct signs of tomentum on apical part of sublateral stripes. Long, semi-erect, yellowish-white hairs cover mesonotum and scutellum, and are thicker on lateral borders. Pleura matt-black in ground colour, hypopleuron bare, sternopleuron with a few hairs, elsewhere pale, yellowish-white hairs numerous, especially thick on upper areas and along hind margin of mesopleuron. Sooty-black area surrounds posterior spiracle.

Legs: Coxae like pleura, with rather sparse, long, pale hairs. Femora similarly black, narrowly pale at apical joints, with short pale, shining hairs. Tibiae light yellow-orange with black tips, widest on fore tibiae, and short, pale, shining hairs. Tarsi blackish, first basitarsus pale basally, first three tarsal segments of middle and hind legs pale basally.

Wings: Membrane yellow-grey; veins very dark black-brown, all of them except R pale yellowish-brown basally. Base of costal vein yellow-brown slightly tinged with dark brown, covered with short, shining, pale hairs and contrasting with sooty basicostal scale. R_1 pale along edge of light yellow-brown stigma. R_4 with appendix, first posterior cell closed and stalked. Some clouding along crossveins, in apices of basal cells, partway along R_{2+3} and R_{4+5}. Most distinctive marking on wing is a brown cloud situated on and above R_4 and across R_{2+3}, but not quite reaching apical margin. Haltere with dark brown stalk, knob deep yellow tinged with brown adjacent to stalk and on sides. Squamae pale yellowish-white with pale fringe.

Abdomen: First segment with grey tomentum over black ground colour, covered with shining yellowish-white hairs. Second segment subshining black with red-brown lateral quadrangles, the only brown on the abdomen; hairs pale, shining, yellowish-white, sparse on fore part of tergite, denser on median triangle which is without tomentum, and denser still posteriorly, forming a whitish hind margin which is broadened laterally. On reddish areas hairs are golden-orange, contrasting with paler hairs. Tergites 3-6 similar but with narrower hind margins, less distinct median triangles, less extensive lateral expansions to hind margins, no red-brown lateral patches, but all with long, golden-orange hairs laterally forming a conspicuous, scalloped fringe. Ultimate tergite covered with pale hairs which are thickest around the borders. Venter shining black, sternites with pale hind margins of hairs. Golden-orange lateral fringe projecting from tergites is especially conspicuous in ventral view.

Measurements: Length without antennae, 15 mm; wing length 12 mm.

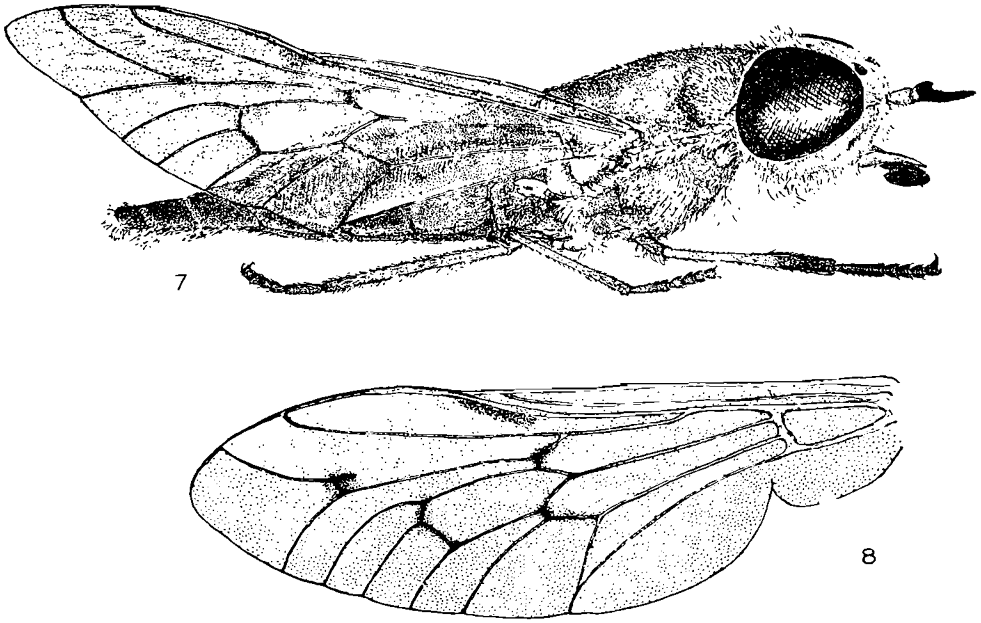
Holotype ♀ in Natal Museum (Type No. 1139), collected by K. Tinley, Giants Castle Game Reserve, Natal Drakensberg Mountains, altitude 5,600 ft., 28 December 1964. The specimen was found resting on the wall of a house.

Genus *Limata* Oldroyd

Limata Oldroyd, 1954, Horseflies Ethiop. Reg. **2**, p. 67.

Limata kuhnelti n.sp. (Figs. 7-9)

This species, the first recorded tabanid from the Namib Desert, is peculiar and looks rather like a flattened *Atylotus* sp. However, the basicostal scale is bare, and although its characters do not fit in Oldroyd's (1954, p. 47) key to the genera of Tabanini (genera with a bare basicostal scale are placed in the Tribe Diachlorini in Oldroyd, 1957, p. 36), the species would appear to belong to the genus *Limata*, a conclusion with which Mr. Oldroyd agrees. The alternative—to erect a new genus for this species—does not appear justified, especially in view of the difficulty of defining genera in the Diachlorini (witness the synonymy of *Amanella* Oldroyd with *Cydistomyia* Taylor by Mackerras, as discussed by Usher, 1965, p. 64).



Figs. 7 and 8. *Limata kuhnelti* n.sp. (7) holotype, (8) wing.

With reference to the characters used in Oldroyd's key, the most important points of deviation and concurrence are as follows. The subcallus is only slightly convex and is completely if not densely tomented, much as in *Neavella*, but the antennae are not elongate as in that genus. The frons is broad and divergent, and the callus is utterly peculiar, being widely divided in the middle into two small, roughly pentagonal, highly polished, prominent areas adjoining the eyes. Also, the eyes are not obviously hairy, the hairs being sparse and small enough to be difficult to see.

This species will not fit anywhere in the key to the species of *Limata* (Oldroyd, 1954, p. 68), which is in no way surprising. I hope to describe, in the near future, two other new species of *Limata* recently discovered which also do not exactly fit within the present limitations of the genus, and will leave until then such slight alterations to the definition of the genus as are necessary to include these three species.

In the Namib Desert there is very little vegetation, and from its shape and colouring this fly could be expected to be found crouching on the sand dunes. Presumably the curiously dorsoventrally flattened habitus, the unusually wide head and eyes, and the dusty, sandy appearance are features adaptive to this environment. It is a remarkable species, unlike any other *Limata* yet described.

Female (fig. 7).

Head: Eyes broad, rather shallow dorsoventrally. Judging from the arrangement of the ommatidia, maximum vision must be above and to the side; the number of ommatidia facing down is relatively few. Eye colour in dried specimen blackish-purple with slight greenish sheen. There is no indication of eye bands and I have not attempted to restore them (if present) as the holotype is unique.

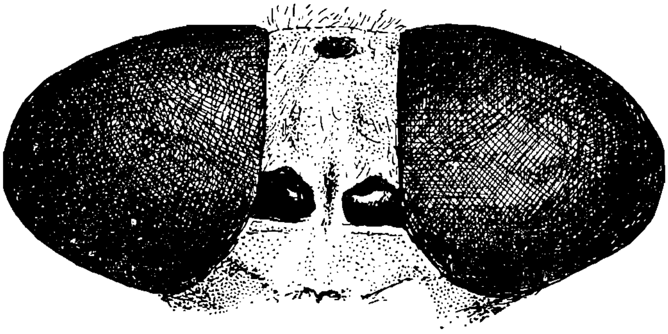


Fig. 9. *Limata kuhnelti* n.sp. Head in frontal view.

Frons (fig. 9) moderately broad, slightly divergent towards antennae, length/breadth at middle 3.2:2.5, with not dense yellowish-grey tomentum over black ground colour. A slightly raised, conspicuous, black, oval ocellar spot present, ocelli clearly non-functional. Callus divided into two irregular, roughly pentagonal, raised, shining black spots adjoining eye margins, yellowish-grey tomentose between spots as on frons, but with thinner tomentum medially and black ground colour showing through in elongate black and grey streak. Subcallus not swollen, slightly convex only, yellow-grey tomentose with black ground colour showing through. Parafacials and face with more whitish tomentum, and with long but not dense, yellowish-white, inclinate hairs, parafacials slightly swollen, both without markings. Palpi whitish-yellow; second segment with moderately long, whitish hairs and some black ones; first segment slender, narrow, pointed, nearly as long as proboscis, with longer, denser and whiter hairs. Proboscis (fig. 7) rather short, sooty black. Antennae: first segment longer than second, subtriangular; second segment short, as wide as third, both yellow, with pale yellowish-white tomentum and whitish, short hairs; third segment contrasting sooty velvety-black, with small dorsal angle sharply downcurved, rather small and short overall; terminal segments also sooty-black, fairly thick and short, ultimate one sharply tapered to a point.

Thorax: Mesonotum blackish-grey in ground colour with some thin, yellowish-white tomentum and sparse, rather long, whitish hairs which are most conspicuous along lateral borders. No definite pattern visible; the specimens is slightly rubbed and appears to have broad, indistinct lateral stripes of less dense tomentum, but this may be an artifact. Scutellum uniform, dark, semi-matt grey, thinly tomented yellowish-white, with a few long, pale hairs. Pleura ashy-grey, tomentum thin, greyish-white through which black ground colour shows in minute, short, fine lines. A broad, irregular band of long, white hairs extends from propleuron to metapleuron beneath wing base and from there down hind margin of hypopleuron. Long, white hairs are also fairly numerous along ventral midline, but elsewhere sparse.

Wings: Macroscopically faintly milky or dusty, with a heavy if limited spotting on the crossveins (fig. 8). Microscopically, with transmitted light, membrane appears only very slightly smoky and extent of spotting is not easily decided. Basally veins are pale, brownish-yellow, shading to black along apical and hind wing margins. Costa darkens after stigma, circumambient vein dark. Stigma conspicuous, clear brown. Crossveins black, heavily infuscated.

Legs: Coxae like pleura, with many long, pale hairs. Femora grey, fore pair darkest with narrowly yellow apical joints; middle and hind femora yellow-grey, all femora thinly covered with ashy-yellow tomentum; hairs long, pale and fairly numerous. Tibiae yellow, darkened apically with mostly yellow, shining hairs but some black ones on anterodorsal edge; hind tibial fringe of longer pale hairs with some dark ones.

Abdomen: Dorsum predominantly dusty grey. First tergite dark, dusty-grey with a strip of yellow laterally on hind margin, thinning out until it disappears medially; hairs fairly long, moderately numerous, pale yellowish-white. Second tergite brownish-yellow in a lateral patch meeting hind margin of first tergite, this patch narrowing towards hind margin of second tergite. Third tergite with trace of yellow-brown streaking sublaterally, otherwise matt, dusty, dark grey as are remaining tergites, with very narrow, pale yellow hind margin. Hairs long, pale yellowish-white, mostly situated laterally, along hind margins and forming long tufts at posterior corners of tergites, especially the fifth, sixth and seventh tergites. Otherwise hairs sparse, except on terminal segment, but specimen appears rubbed and may have lost a number of median hairs. Pattern on sternites much the same as on tergites, but pale hairs more numerous and lateral yellow patch less extensive.

Measurements: Length without antennae, 12 mm; wing length 10 mm.

Holotype ♀ in Natal Museum (Type No. 1140), collected by Professor W. Kühnelt of the Vienna University, at Gobabeb, Namib Desert Research Station, South West Africa, 1 March 1964.

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